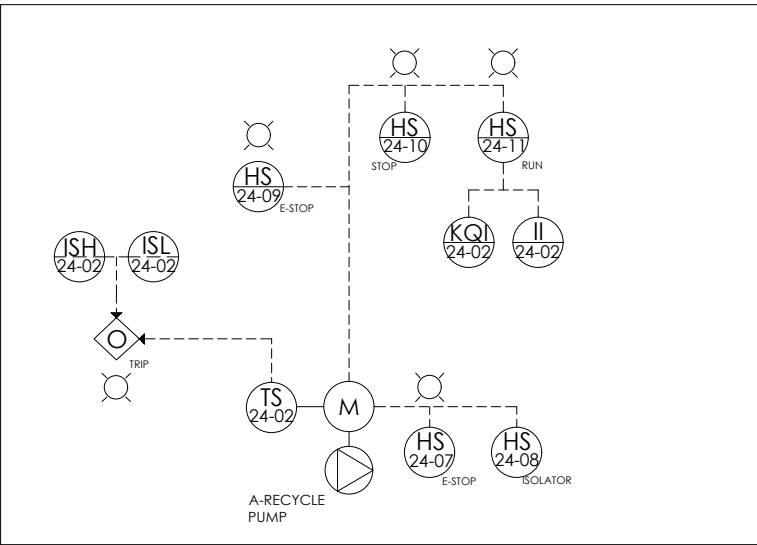


DETAIL 9: BNRAS A-RECYCLE PUMPS



NOTE 9:

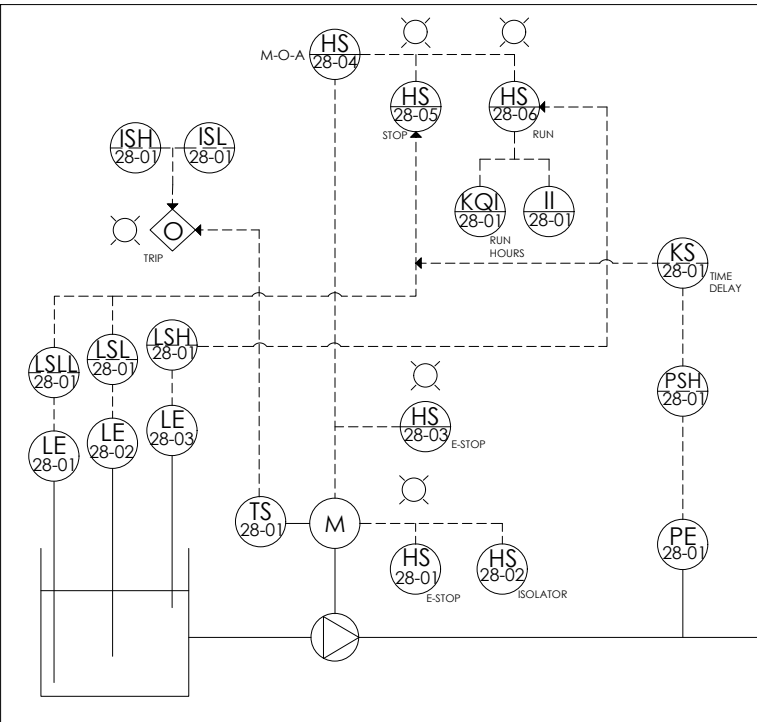
THE A-RECYCLE PUMP OPERATES ONLY IN MANUAL MODE, A HS24-11 RUN OR HS24-10 STOP CAN BE SELECTED BY THE OPERATOR BY WAY OF PRESS BUTTONS. RUN OR STOP INDICATORS ARE ILLUMINATED BASED ON THE OPERATOR'S SELECTION.

WHEN THE A-RECYCLE PUMP IS IN OPERATION, II24-02 AND KQI24-02 METERS ARE ACTIVATED.

AN IN-FIELD E-STOP (HS24-07), ISOLATOR (HS24-08) AND ON PANEL E-STOP (HS24-09) ARE SET TO CUT POWER TO THE A-RECYCLE PUMP AND A STOP INDICATOR IS ILLUMINATED.

TRIPS ON THE A-RECYCLE PUMP AND MOTOR INCLUDE, HIGH TEMPERATURE (TS24-02) IN THE MOTOR, UNDERLOAD CURRENT (ISL24-02) AND OVERLOAD CURRENT (ISH24-02). A TRIP SWITCHES OFF THE A-RECYCLE PUMP AND THE TRIP INDICATOR IS ILLUMINATED.

DETAIL 10: BNRAS WASTE ACTIVATED SLUDGE (WAS) PUMP



NOTE 10:

THE TWO WAS PUMPS WORK ON A "DUTY STANBY FLIP-FLOP ROTATION" BASIS. A MANUAL, OFF OR AUTOMATIC MODE (HS28-04) CAN BE SELECTED BY THE OPERATOR. IN MANUAL MODE, THE WAS PUMP CAN BE RUN BY HS28-06 OR STOPPED BY HS28-05 PRESS BUTTONS. RUN OR STOP INDICATORS ARE ILLUMINATED BASED ON THE OPERATOR'S SELECTION.

IN AUTOMATIC MODE, THE WAS PUMP RUNS WHEN THE LSH28-01 IS ACTIVATED. WHEN THE WAS PUMP IS IN OPERATION, THE RUN INDICATOR ILLUMINATES. THE WAS PUMP STOPS WHEN THE LSL28-01 IS ACTIVATED. LOW LEVEL PROTECTION PREVENTS RUNNING DRY, WHEN LSL28-01 IS ACTIVATED THE MOTOR SHALL STOP. WHEN THE WAS PUMP HAS STOPPED, A STOP INDICATOR IS ILLUMINATED.

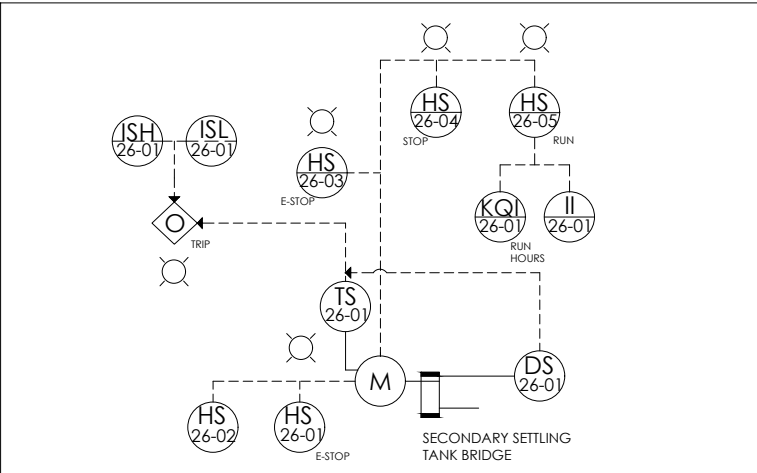
THE WAS PUMP RUNS WHEN LSH28-03 IS ACTIVATED AND STOPS WHEN ANY OF LSL28-01, LSL28-02 OR PSH28-01 ARE ACTIVATED. KS28-01 IS A TIME DELAY THAT PREVENTS THE PUMP FROM IMMEDIATELY SWITCHING OFF (E.G PRESSURE SPIKES, OR START-UP)

WHEN THE WAS PUMP IS IN OPERATION EITHER IN MANUAL OR AUTOMATIC, II28-01 AND KQI28-01 METERS ARE ACTIVATED.

AN IN-FIELD E-STOP (HS28-01), ISOLATOR (HS28-02) AND ON PANEL E-STOP (HS28-03) ARE SET TO CUT POWER TO THE WAS PUMP, WHETHER IN MANUAL, OFF OR AUTOMATIC MODE. A STOP INDICATOR IS ILLUMINATED WHEN THE WAS PUMP IS OFF.

WHEN TRIPS ON THE WAS PUMP ARE ACTIVATED POWER TO THE WAS PUMP IS CUT AND THE TRIP INDICATOR IS ILLUMINATED. TRIPS ON THE WAS PUMP AND MOTOR MAY INCLUDE HIGH TEMPERATURE (TS12-07) IN THE MOTOR, UNDERLOAD CURRENT (ISL12-07) AND OVERLOAD CURRENT (ISH12-07).

DETAIL 11: SECONDARY SETTLING TANK BRIDGE MOTOR



NOTE 11:

THE BRIDGE MOTOR OPERATES ONLY IN MANUAL MODE, A HS26-05 RUN OR HS26-04 STOP CAN BE SELECTED BY THE OPERATOR BY WAY OF PRESS BUTTONS. RUN OR STOP INDICATORS ARE ILLUMINATED BASED ON THE OPERATOR'S SELECTION.

WHEN THE BRIDGE MOTOR IS IN OPERATION, II26-01 AND KQI26-01 METERS ARE ACTIVATED.

AN IN-FIELD E-STOP (HS26-01), ISOLATOR (HS26-02) AND ON PANEL E-STOP (HS26-03) ARE SET TO CUT POWER TO THE BRIDGE MOTOR AND A STOP INDICATOR IS ILLUMINATED.

TRIPS ON THE BRIDGE MOTOR MAY INCLUDE, HIGH TEMPERATURE (TS24-02) IN THE MOTOR, UNDERLOAD CURRENT (ISL24-02) AND OVERLOAD CURRENT (ISH24-02). A TRIP SWITCHES OFF THE A-RECYCLE PUMP AND THE TRIP INDICATOR IS ILLUMINATED.

NOTES:  
REFER TO DRAWING 10909001-7000 FOR PROCESS AND INSTRUMENTATION LEGEND.

LOCAL MUNICIPALITY: MAP



SPONSOR & REGULATOR: DWS



ISSUED FOR TENDER



(A) BEFORE CONTRACT COMMENCES  
(B) AFTER CONSTRUCTION CONTRACT HAS COMMENCED

Nr.	DATE	AMENDMENTS

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CLIENT / IMPLEMENTING AGENT



PROJECT  
TSHIAME WWTW REFURBISHMENT

DRAWING DESCRIPTION  
P&ID SIGNAL DIAGRAMS, NOTES & DETAILS:  
PART 4

DRAWING NO.	REVISION
10909001 - 7021	(T1)

DESIGNED:	JAW	CHECKED:	ECSA PR No: 20130658	
DRAWN:	SP	SCALE:	N.T.S	A3
APPROVED:	ECSA PR No: 20130658	INCEPTION DATE:	JUL'24	
FILE PATH:	SHAREPOINT / BLOEMFONTEIN - 10909001 TSHIAME WWTW / 04 DOC PROC / 04 DRAW			



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